


# Guardian®

## Portable Filtration System



Parker

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# Guardian®

## Portable Filtration System



The Guardian portable filtration system is a unique pump/motor/filter combination designed for conditioning and transferring petroleum-based and water emulsion fluids. It protects your system from contamination added with new fluid because new fluid is not necessarily clean fluid. Most new fluids right out of the drum are unfit for use due to high initial concentrations of contaminants. Contamination may be added to a new fluid during processing, mixing, handling, and storage.

The Guardian also circulates and "polishes" fluid in your existing systems to reduce the contamination to an acceptable level. There are hundreds of applications that the Guardian is suited for, with more being discovered each day. If your system is sensitive to the harmful effects of contamination, then the Guardian may be ideal for you.

| Features | Advantages | Benefits |
|---|---|---|
| Lightweight, hand held, compact design | Easy to carry and fits easily on top of 55 gallon drums. | One person operation, capable of getting to hard to reach areas. |
| Flow rate to 4 gpm (18 lpm). | Filters and transfers simultaneously. | One step operation. |
| Pump/motor combination with Carboxylated Nitrile seals standard. | Handles fluids up to 16,000 SUS viscosity (11,000 SUS -24 VDC). | Reliable performance in a wide variety of operating conditions. |
| Built-in relief valve with no downstream fluid bypass. | Only filtered fluid reaches downstream components. | 100% filtration ensured, even when unattended. |
| Wide variety of filter elements available. | High capacity 2 micron absolute disposable microglass to 74 micron cleanable wire and water removal. | Maximizes element life between changes. |
| Clear, wire-reinforced 5' hose assemblies with wand attachments. | No additional hardware required. | Ready to use and easy to maneuver. |
| Optional quick disconnect hose connections. | Fast, easy setup and tear-down. | Eliminates messy drips. |
| Heavy-duty ¼ HP, 115 VAC (230 VAC, 24 VDC- optional) motor with thermal overload protection. | UL recognized and CSA listed, with replaceable brushes. | Safe, reliable performance; field serviceable. |
| Geroter pump with visible serviceable inlet strainer. | Dirt tolerant design with added protection. | Pump reliability in highly contaminated fluids. |
| Quiet operation. | Less than 70dB noise level @ 3 feet. | Can be used most anywhere with minimal disturbance. |
| Convenient inlet-to-outlet hose connection. | Contains fluids when transporting. | Clean and safe operation. |
| Low center of gravity. | Guardian stability. | Unattended reliability. |
| Dual motor seals. | Added motor protection. | Longer motor life. |
| Auxiliary inlet/outlet ports. | Used in place of, or in addition to, standard ports. The outlet can also be used as a sampling port. | Flexibility. |



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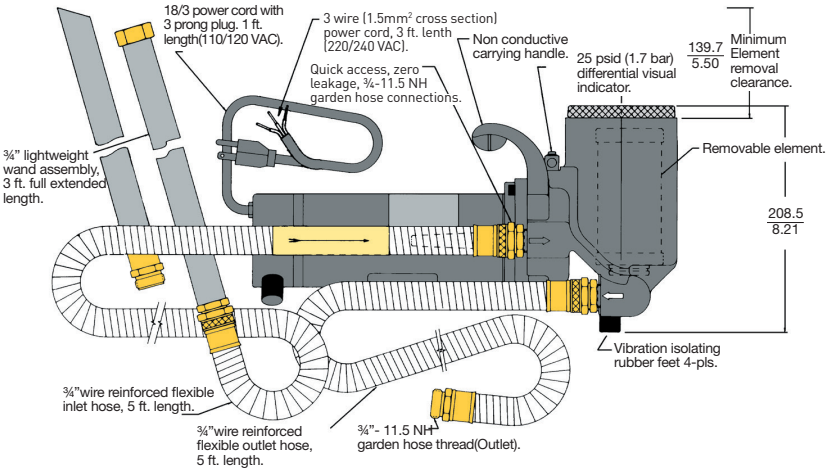
# Guardian®

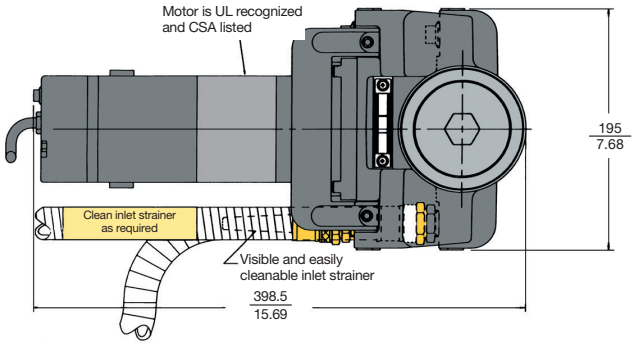
## Specifications and Installation

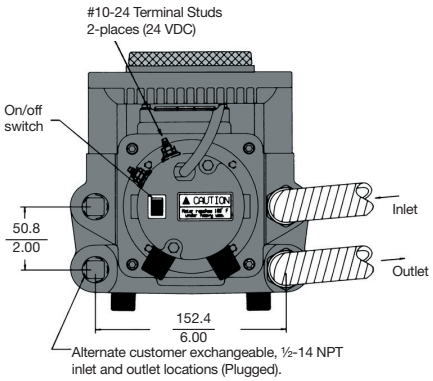
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|---|
| **Maximum Allowable Operating Pressure (MAOP)** |
| 50 psi (3.4 bar) |
| **Flow Capacity** |
| Up to 4 gpm (15 lpm) |
| **Maximum Recommended Fluid Viscosity** |
| (.85 specific gravity)<br>110-120 VAC and 220-240 VAC - 16,000 SUS<br>24 VDC - 11,000 SUS |
| **Warning** |
| Explosion hazard. Do not pump flammable liquids such as gasoline, alcohol, solvents, etc. |
| **Ambient Operating Temperature** |
| -15°F to 104°F (-26°C to 40°C) |
| **Fluid Operating Temperature** |
| -15°F to 120°F (-26°C to 49°C) |
| **Visual Indicator** |
| Differential pressure type, set at 25 psid (1.7 bar) |
| **Recommended Fluids** |
| Petroleum based oils, water emulsions, and diesel fuels |
| **Integral Relief Valve** |
| Set at 50 psi (3.4 bar) for motor protection. |
| **Noise Level** |
| <70db at 3 ft. |
| **Electrical Motor** |
| ¼ hp@2500 rpm.<br>24 VDC; 10A max.<br>110-120 VAC; 50/60 Hz; 3A max.<br>220-240 VAC; 50/60 Hz; 1.5A max.<br>Thermal overload protected.<br>Replaceable brushes (500 hours). |
| **Weight** |
| Approximately 24 lbs (10.8 kg) |
| **Materials** |
| Housing - cast aluminum<br>Cover - die cast aluminum<br>Handle and Indicator - nylon<br>Wands and Hose - PVC<br>Fittings - brass<br>Seals - fluorocarbon/carboxylated nitrile |

### Dimensions

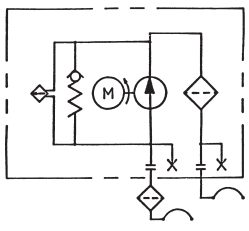
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### Guardian Schematic






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## Element Performance

| Media Code | Filter Media | Time Averaged Beta x/y/z =2/20/75 Where x/y/z is: | Dirt Capacity (Grams) |
|---|---|---|---|
| 74W | Woven Wire | 74 micron[1] | * |
| 40W | Woven Wire | 40 micron[1] | * |
| 25W | Woven Wire | 25 micron[1] | * |
| 20C | Cellulose | 20 micron[1] | * |
| 10C | Cellulose | 5/8/16 | 4 |
| 20Q | Microglass | 7.1/13.7/17.3 | 16.2 |
| 10Q | Microglass | 2.7/7.3/10.3 | 14.4 |
| 05Q | Microglass | <2/2.1/4.0 | 14.9 |
| 02Q | Microglass | <2/<2/<2 | 14.3 |

| Beta Rating | Efficiency at x Particle Size |
|---|---|
| $B_x = 2$ | 50.0% |
| $B_x = 20$ | 95.0% |
| $B_x = 75$ | 98.7% |
| $B_x = 200$ | 99.5% |
| $B_x = 1000$ | 99.9% |

Multipass test run at 4 gpm (15 lpm) to 35 psid (2.4 bar)
[1]Reference ratings only. Not multipass tested due to coarseness.
* Not applicable

## Estimated Guardian Element Life and Cleanliness Levels

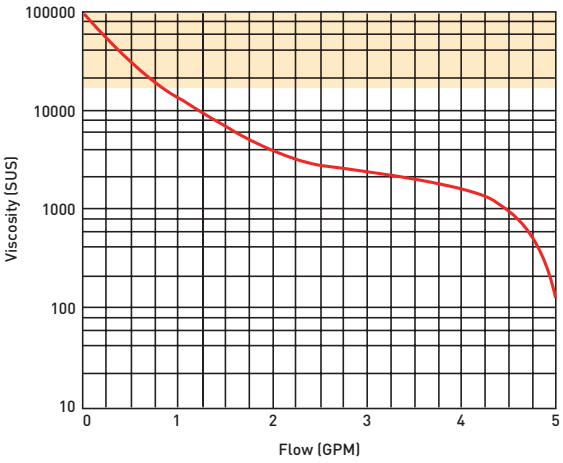
The following chart shows typical element life (in gallons of oil passed) and cleanliness levels achieved by standard Parker elements available with the Guardian. Some assumptions have been made.*

| Media Code | New Oil ISO | ISO Achieved | Element Life | Elements Used per 250 gallons |
|---|---|---|---|---|
| 10C | 22/20/16 | 21/19/15 | 120 gallons | 2.08 |
| 20Q | 22/20/16 | 21/19/15 | 486 gallons | .51 |
| 10Q | 22/20/16 | 19/16/14 | 407 gallons | .61 |
| 05Q | 22/20/16 | 17/15/12 | 330 gallons | .75 |
| 02Q | 22/20/16 | 15/13/10 | 316 gallons | .79 |

* 1. New oil is at ISO 22/20/16.
2. No environment or work ingression.
3. Single pass oil transfer.

NOTE: Data for fluid transfer only. For continuous fluid polishing, lower ISO cleanliness levels will be achieved.

## Guardian Flow vs. Viscosity Performance




Note 1: Guardian not recommended for fluid viscosities greater than 16,000 SUS (11,000 SUS;24VDC)

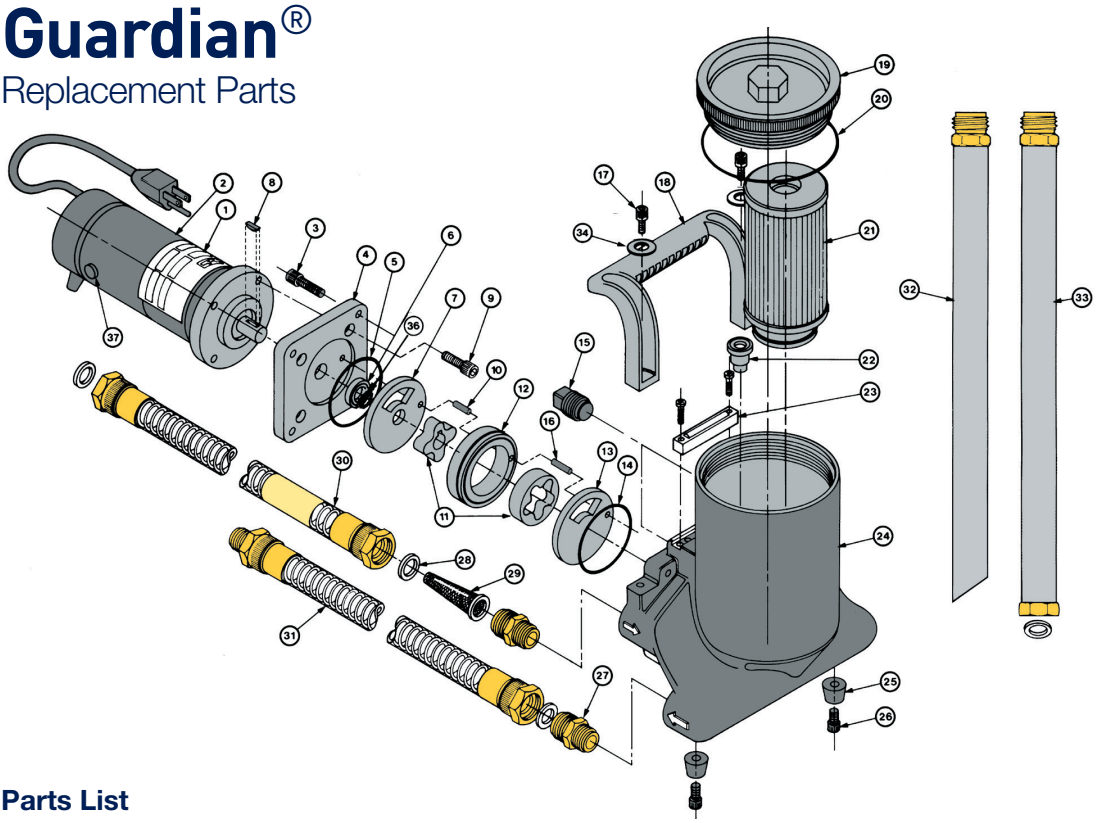
Note 2: Flows based on Guardian with no element installed



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# Guardian®

## Replacement Parts



### Parts List

| # | Part Number | Description |
|---|---|---|
| 1 | CF | LABEL |
| 2 | 931913<br>932381<br>932759 | MOTOR (110-120 VAC)<br>MOTOR (220-440 VAC)<br>MOTOR (24 VDC) |
| 3 | 902734 | SOCKET HEAD CAP SCREW (4),¼-20X1 |
| 4 | 931890 | ADAPTER PLATE |
| 5 | V72041 | HOUSING O-RING |
| 6 | 931921 | POLYPAK SEAL |
| 7 | 931899 | SHADOW PLATE |
| 8 | 931877 | WOODRUFF KEY 1/8 X 3/8 |
| 9 | 902679 | SOCKET HEAD CAP SCREW (4), ¼-20 X ¾ |
| 10 | 903630 | ROLL PIN 1/8 X ¾ |
| 11 | 931873 | GEROTER SET |
| 12 | 931903 | GEROTER RING |
| 13 | 931900 | OUTLET PLATE |
| 14 | V72135 | GEROTER O-RING |
| 15 | 931920 | BRASS PIPE PLUG (2) ½-14 |
| 16 | 903426 | Roll Pin 1/8 x 5/8 |
| 17 | 931889 | SOCKET HEAD CAP SCREW (2), ¼-20 x 5/8 |
| 18 | 931897 | HANDLE |
| 19 | 931892 | COVER |
| 20 | V72237 | COVER O-RING |

| # | Part Number | Description |
|---|---|---|
| 21 | SEE 44 | ELEMENT |
| 22 | 928981 | RELIEF VALVE |
| 23 | 927422 | INDICATOR KIT |
| 24 | 931838 | HOUSING |
| 25 | 931888 | RUBBER BUMPERS (2) |
| 26 | 902907 | SOCKET HEAD CAP SCREW (2), ¼-20 x ½ |
| 27 | 931928 | BRASS FITTING (2) |
| 28 | 931956 | GASKET (4) |
| 29 | 931927 | INLET SCREEN |
| 30 | 931936 | INLET HOSE ASSEMBLY |
| 31 | 931937 | OUTLET HOSE ASSEMBLY |
| 32 | 931965 | WAND CREVICE ASSEMBLY |
| 33 | 931966 | WAND ADAPTER ASSEMBLY |
| 34 | 926106 | WASHER (2) |
| 35 | 932097 | QUICK DISCONNECT KIT (NOT SHOWN) |
| 36 | 932085 | WASHER |
| 37 | 934329<br>934327<br>932761 | BRUSH KIT (110/120 VAC)<br>BRUSH KIT (220/240 VAC)<br>BRUSH KIT (24 VDC) |
| | 932263 | SEAL KIT |
| | 932081 | BOWL EXTENSION KIT |

*CF - Consult Factory*



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## Guardian Operation

A. Remove all shipping plugs from the hoses and fittings.
B. Connect the inlet and outlet hose assemblies to the unit.
C. Connect the wand assemblies, if required.
D. Place the inlet hose wand assembly into the fluid to be filtered and/or transferred.
E. Place the outlet hose/wand assembly into the container where the fluid discharge is desired.
F. Plug in the unit.
G. Flip the switch on the end of the unit to the “on” position.

NOTE: For no-mess transportation, the inlet and outlet hose assemblies can be screwed together by removing the wand assembly.

## Guardian Element Servicing

A. Flip the switch on the end of the unit to the “off” position and disconnect the electrical plug.
B. Rotate the cover counter-clockwise and remove.
C. Remove the element from the housing. Discard all disposable elements. These elements are not cleanable,
D. Place the new element In the housing, fitting the o-ring neck into the large hole at the bottom.
E. Inspect the cover o-ring and replace if necessary.
F. Replace the cover and hand-tighten.

NOTE 1: It is recommended that the Guardian be cleaned and flushed between uses with dissimilar fluids to prevent fluid mixing.
NOTE 2: Motor brushes may require changeout every 500 service hours

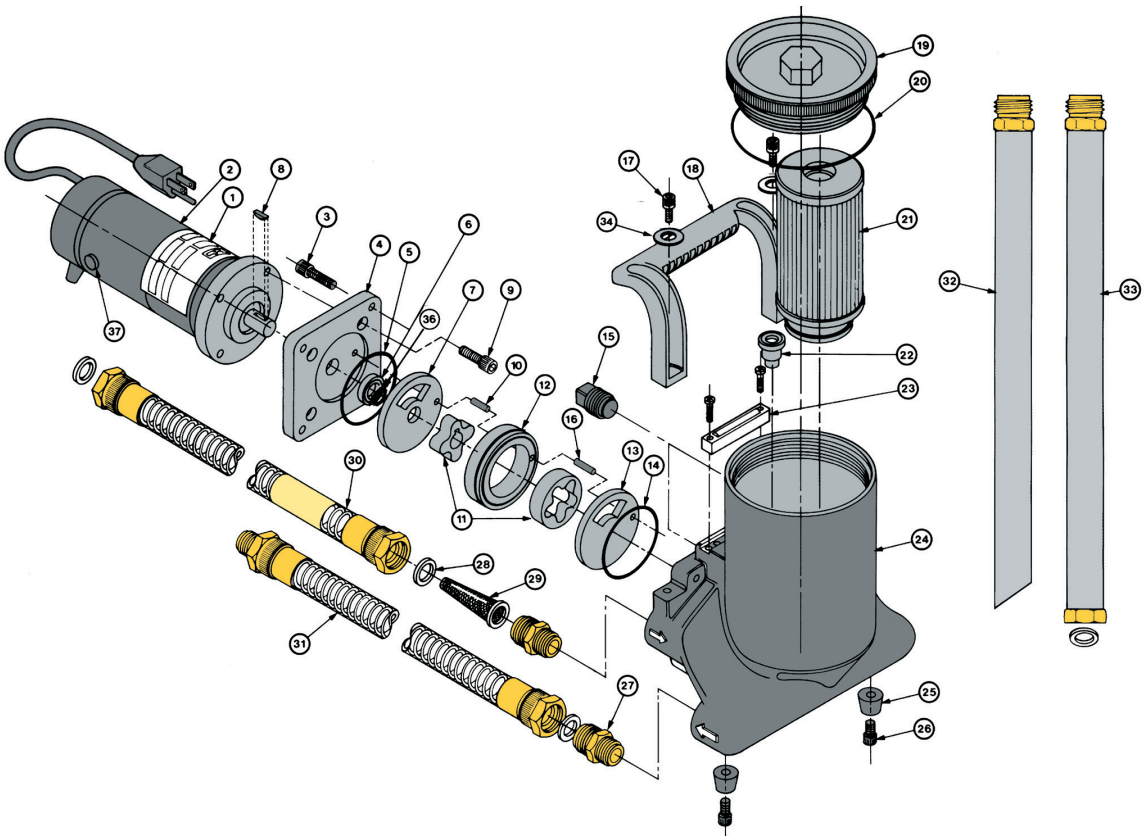
## Troubleshooting Guide

| Problem | Cause | Solution |
|---|---|---|
| Does not start. | ON/OFF switch.<br>No electrical power.<br>Rectifier.<br>Motor overheats (160°F).<br>Defective motor. | Turn switch on, replace switch if defective.<br>Plug in Guradian, check for tripped circuit breakers, check for blown fuses.<br>Replace if defective.<br>Allow motor to cool, thernal overload will automatically reset.<br>Replace motor. |
| Does not start or errattic motor noise. | Worn motor brushes. | Replace motor brushes. |
| Intermittent start/stop operation. | High viscosity fluids.<br>Worn motor brushes.<br>Defective motor. | High viscosity fluids can cause the motor to overheat and cycle intermittently.<br>Replace motor grushes.<br>Replace motor. |
| Hot motor. | Pumping under heavy load.<br>Defective motor. | It is normal, under a heavy pumping load for the motor to reach 160°F.<br>Replace motor if shell temperature reaches greater than 170°F. |
| No flow or erratic pump noise. | Filter housing not filled with oil.<br>Suction leak.<br>Obstructed outlet.<br>Element dirty.<br>Sheared pump key.<br>Defective Guardian. | Allow Guardian to run a few seconds.<br>Check tghtness of inlet fittings and hoses. Check gaskets are in place and are not damaged. Kink or restriction in the inlet hose.<br>Clear outlet.<br>Replace or clean element.<br>Replace woodruff key.<br>Replace unit. |
| No flow, erratic pump noise, motor overheats. | Gears binding. | Disassemble Guardian and throroughly clean the gear set.<br>Always use the inlet strainer provided to protect the unit.<br>Replace defective gears. |
| No suction. | Plugged strainer. | Clean or replace the inlet strainer as required.<br>Clean relief valve. Check for damaged internal o-rings. |
| Reduced oil flow. | High viscosity fluids.<br>Element dirty.<br>Relief valve sticks or is lodged open.<br>Partially obstructed inlet or outlet hose.<br>Suction leak.<br>Worn gears. | High viscosity fluids can cause reduced flow, which is normal.<br>Replace or clean element.<br>Clean releif valve or replace if defective.<br>Clear the hose obstruction.<br>Check tightness of inlet fittings and hose.<br>Replace gear set. |
| Indicator moves to RED Area. | Element dirty.<br>Oil extremely cold or viscous.<br>Obstruced outlet.<br>Defective indicator. | Replace or clean element.<br>Change element to coarser micron rating.<br>Clear outlet obstruction.<br>Replace indicator. |
| Indicator dows not seem to move. | No element.<br>Defective indicator. | Install element.<br>Replace indicator. |
| Joses discolor or are hard. | Fluid compatibility. | Certain fluids, over time, will cause the hoses to discolor. This does not impair their performance. But, some fluids will cause the hoses to become brittle, requiring replacement. |
| Oil formation under unit. | Defective shaft seal. | Replace the motor shaft seal. |



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# Guardian Replacement Parts



| Item No. | Description | PN |
|---|---|---|
| 1 | Label | Consult Factory |
| 2 | Motor, 110-120 VAC | 931913 |
| | 220-440 VAC | 932381 |
| | 24 VDC | 932759 |
| 3 | SHCS(4),¼-20x1 | 902734 |
| 4 | Adapter Plate | 931890 |
| 5 | Housing O-Ring | V72041 |
| 6 | Polypak Seal | 931921 |
| 7 | Shadow Plate | 931899 |
| 8 | Woodruff Key 1/8 x 3/8 | 931877 |
| 9 | SHCS(4), ¼-20 x ¾ | 902679 |
| 10 | Roll Pin 1/8 x ¾ | 903630 |
| 11 | Geroter Set | 931873 |
| 12 | Geroter Ring | 931903 |
| 13 | Outlet Plate | 931900 |
| 14 | Geroter O-ring | V72135 |
| 15 | Brass Pipe Plug (2) ½-14 | 931920 |
| 16 | Roll Pin 1/8 x 5/8 | 903426 |
| 17 | SHCS (2), ¼-20 x 5/8 | 931889 |
| 18 | Handle | 931897 |
| 19 | Cover | 931892 |
| 20 | Cover O-Ring | V72237 |

| Item No. | Description | PN |
|---|---|---|
| 21 | Element (see next page) | |
| 22 | Relief Valve | 928981 |
| 23 | Indicator Kit | 927422 |
| 24 | Housing | 931838 |
| 25 | Rubber Bumpers (2) | 931888 |
| 26 | SHCS(2), ¼-20 x ½ | 902907 |
| 27 | Brass Fitting (2) | 931928 |
| 28 | Gasket (4) | 931956 |
| 29 | Inlet Screen | 931927 |
| 30 | Inlet Hose Assembly | 931936 |
| 31 | Outlet Hose Assembly | 931937 |
| 32 | Wand Crevice Assembly | 931965 |
| 33 | Wand Adapter Assembly | 931966 |
| 34 | Washer (2) | 926106 |
| 35 | Quick Disconnect Kit | 932097 |
| | (Not Shown) | |
| 36 | Washer | 932085 |
| 37 | Brush Kit (110/120) | 934329 |
| | (220/240 VAC) | 934327 |
| | (24 VDC) | 932761 |
| | Seal Kit | 932263 |
| | Bowl Extension Kit | 932081 |

NOTE: SHCS denotes “socket head cap screw”



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# Guardian Series

## Portable Filtration System

### How To Order

Select the desired symbol (in the correct position) to construct a model code.

Example:

| BOX 1 | BOX 2 | BOX 3 | BOX 4 |
|---|---|---|---|
| | GT4 | 10C | 1 |

**BOX 1: Seals**

| Symbol | Description |
|---|---|
| **None** | **Carboxylated Nitrile** |

**BOX 2: Model**

| Symbol | Description |
|---|---|
| **GT4** | **Guardian® 110/120 VAC** |
| GT4D | 24 VDC |
| GT4E | 220/240 VAC |

**BOX 3: Media**

| Symbol | Description |
|---|---|
| 25W | Wire Mesh |
| 40W | Wire Mesh |
| 74W | Wire Mesh |
| **10C** | **Cellulose** |
| 02Q | Microglass, 2 micron |
| 05Q | Microglass, 5 micron |
| 10Q | Microglass, 10 micron |
| 20Q | Microglass, 20 micron |
| WR | Water Removal |

**BOX 4: Options**

| Symbol | Description |
|---|---|
| **1** | **None** |
| 6 | Quick disconnect hose connections |

Please note the bolded options reflect standard options with a reduced lead time.

### Replacement Elements

| Media | Part No. | Box Qty. |
|---|---|---|
| 02Q | 933467Q | 2 |
| 05Q | 932018Q | 2 |
| 10Q | 932017Q | 2 |
| 20Q | 933468Q | 2 |
| 10C | 932016 | 2 |

| Media | Part No. | Box Qty. |
|---|---|---|
| 20C | 932020 | 2 |
| 25W | 922627 | 1 |
| 40W | 922628 | 1 |
| 74W | 922626 | 1 |
| WR | 932019 | 2 |

Global products as identified are offered worldwide through all Parker locations and utilize a common ordering code.



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